

TECHNICAL REVIEW DOCUMENT
For
RENEWAL of OPERATING PERMIT 95OPWE001

Thermo Power and Electric LLC – Greeley Facility
Weld County
Source ID 1230126

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Revised February, August and October 2005

I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued January 1, 1999. The expiration date for the permit was January 1, 2004. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted October 28, 2002, additional information submitted on December 10, 2002 and January 6, 2003, comments on the draft permit and technical review document received on April 11, 2005, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility consists of a cogeneration facility defined under Standard Industrial Classification 4931. Electricity for sale is produced by two (2) combustion turbines and a steam turbine. Each combustion turbine serves a generator rated at 42.5 MW (name-plate) and the steam turbine generator is rated at 16.3 MW (name-plate). The permit was revised on October 14, 2003 to allow the construction and operation of a natural gas-fired boiler. However, since construction of the boiler did not commence within 18 months of issuance of the revised permit, the permit conditions for the boiler expired and they have been removed from the permit.

The facility is located at 510 18th Street, in Greeley, CO on the University of Northern Colorado (UNC) Campus. The facility is located in an area classified as attainment/maintenance for carbon monoxide (CO) and attainment for all other pollutants. Under that classification, all SIP-approved requirements for CO will continue to apply in order to prevent backsliding under the provisions of Section 110(l) of the Federal Clean Air Act. This area is also located within the 8-hour Ozone Control Area as defined in Colorado Regulation No. 7, Section II.A.16.

Wyoming, an affected state, is within 50 miles of the facility. Rocky Mountain National Park, a federal Class I area is within 100 km of this facility.

Based on the information provided in the renewal application, no changes have been made to any of the significant emission units.

MACT Requirements

Case-by-Case MACT - 112(j) (40 CFR Part 63 Subpart B §§ 63.50 thru 63.56)

Under the federal Clean Air Act (the Act), EPA is charged with promulgating maximum achievable control technology (MACT) standards for major sources of hazardous air pollutants (HAPs) in various source categories by certain dates. Section 112(j) of the Act requires that permitting authorities develop a case-by-case MACT for any major sources of HAPs in source categories for which EPA failed to promulgate a MACT standard by May 15, 2002. These provisions are commonly referred to as the "MACT hammer".

Owners or operators that could reasonably determine that they are a major source of HAPs which includes one or more stationary sources included in the source category or subcategory for which the EPA failed to promulgate a MACT standard by the section 112(j) deadline were required to submit a Part 1 application to revise the operating permit by May 15, 2002. The source submitted a notice by May 15, 2002 and indicated that the facility is not a major source for hazardous air pollutants (HAPS).

During processing of the renewal permit, the Division calculated HAP emissions for the facility, using emission factors for the turbines from an EPA memorandum dated August

22, 2003. In their comments on the draft permit, received on April 11, 2005, the source indicated that performance tests on other similar GE turbines indicated that the formaldehyde emission rate for these turbines is less conservative than the emission rate predicted by AP-42 emission factors. Because the performance test for the GE turbines located in Ft. Lupton (AIRS id 1230250, GE LM6000s equipped with steam injection) was required by the permit and the protocol and subsequent tests were reviewed and approved by the Division and the test indicated that formaldehyde emissions from the Ft. Lupton turbines were lower than predicted by AP-42 emission factors, the Division agrees that use of the AP-42 formaldehyde emission factor for the turbines at this facility is acceptable. Therefore, the Division agrees that the facility is not a major source for HAPS and that no MACT requirements apply.

Compliance Assurance Monitoring (CAM) Applicability

Although the turbines are equipped with steam injection to reduce NO_x emissions, since the Title V permit specified a continuous monitoring method for NO_x the turbines are not subject to the CAM requirements as specified in 40 CFR Part 64 § 64.2(b)(1)(vi).

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit issuance has been modified to more specifically address potential HAP emissions and to update actual emissions. Emissions (in tons per year) at the facility are as follows:

Emission Unit	Potential to Emit (tons/yr)						
	PM	PM ₁₀	SO ₂	NO _x	CO	VOC	HAPS
Turbine (T001)	20.8	20.8	10	535.5	45	6.24	See Table on Page 15
Turbine (T002)	20.8	20.8	10	535.5	45	6.24	
Total	41.6	51.6	20	1,071.	90	12.48	5.2

The criteria pollutant PTE shown above is based on permitted emission limits for the turbines. Note that there are no permitted emission limits for PM₁₀ for the turbines, PM₁₀ is presumed to equal PM. The breakdown of HAP emissions by emission unit and individual HAP is provided on page 15 of this document. The PTE of HAP emissions is based on emission factors (formaldehyde from AP-42 and others from the 8/22/03 EPA memo for turbines), permitted fuel consumption limits and a natural gas heat value of 1020 Btu/SCF.

Note that actual emissions are not provided, since the source typically reports potential to emit as actual emissions, which is an acceptable practice. It should be noted that the source does not report the potential to emit of NO_x, but reports the “upper estimate”. Based on inspection reports, the “upper estimate” appears to be well above the actual emission rate of the turbines.

Single vs. Separate Source

During processing of the construction permits (1985 – 1989) for this facility, although the Division was aware that the turbines would be used to provide steam to use for heating and cooling UNC and the equipment would be located on UNC property, it is not clear whether the Division ever considered the single vs. separate source issue as it relates to the Thermo cogeneration plant and UNC. There is some information in the files that indicates the Division may have given it some thought, but no real discussion of the issue is addressed in the files. Therefore, the single vs. separate source issue will be addressed here to document the Division's position on whether the Thermo cogeneration facility is considered a single source with UNC. The three criteria for determining a single source are: 1) same SIC code, 2) located on adjacent or contiguous property and 3) common control. If any of the three factors do not apply, then the facilities are considered separate sources.

It is readily apparent that at least one of the three criteria is met. The Thermo cogeneration facility and UNC are certainly both located on the UNC campus.

In the Division's preliminary analysis for the initial minor source permit (initial approval construction permit 85WE345-1 and -2, issued May 15, 1986), the Division noted that whether or not there were any major stationary sources at UNC was irrelevant because the cogeneration facility and the university did not have the same SIC code. However, at the time the construction permits were processed, the concept of a support facility was not really considered. Support facilities are typically those that convey, store, or otherwise assist in the production of the principle product. The Thermo cogeneration facility provides steam for UNC to use for heating and cooling of the buildings on campus (note that the university is classified under SIC 8221). This would certainly be considered a support facility. It appears that the intent is for Thermo to provide 100% of the steam needed by UNC for heating and cooling purposes; however, UNC does have three (3) boilers that can be used to generate hot water in the event that steam cannot be provided by Thermo. In addition, the cogeneration facility also sells electricity to Public Service Company (PSCo). When a single unit is used to support two otherwise distinct sets of activities, it is to be included with the source it supports more heavily. The Division requested that the source provide information indicating how much steam was provided to UNC and whether they provided any electricity to UNC. In their comments on the draft permit and technical review document received on April 11, 2005, the source indicated that UNC can only take 56 mmBtu/hr of steam, which they indicated is approximately 4.7 MW and less than 6% of total generating capacity (80 MW). The 4.7 MW is less than 30% of the generating capacity of the steam turbine (16.3 MW) and less than 9% of the total design heat input capacity of both turbines (678 mmBtu/hr). In addition, the source indicated that UNC does not accept any electricity directly from Thermo. Therefore based on the information provided by the source, the Division considers that Thermo Electric and Power is not a support facility for UNC.

Since the Thermo cogeneration facility is not a support facility for UNC, the same SIC code criteria is not met and further analysis on common control is not required.

Although it should be noted that Thermo has previously indicated in processing the original Title V permit application that Thermo is not associated with UNC regarding the transfer of revenues, liabilities, etc and that they are separate entities and have their own permits for wastewater, storm water and air pollution emissions. Thermo has also previously indicated that they have a long-term lease for the use of the property and a long-term contract to provide thermal energy to UNC; although as previously stated, UNC has its own boilers to provide steam, in the event that steam is not provided by Thermo.

III. Discussion of Modifications Made

Source Requested Modifications

The source submitted their renewal application on October 28, 2002. In their renewal application, the source did not request any changes to their permit.

In their April 11, 2005 comments on the draft permit, the source indicated that the company name had changed from Thermo Power and Electric Inc. to Thermo Power and Electric LLC. This change was made in the renewal permit.

In their April 11, 2005 comments on the draft permit, the source requested that the Division included the CAM requirements in the permit shield for non-applicable requirements. The Division has granted the permit shield as requested.

In their April 11, 2005 comments on the draft permit, the source requested that the Division revise the language in the condition for fuel consumption (Condition 1.2 in the current permit, Condition 1.7 in the draft renewal permit), to specify that monthly fuel consumption is based on monthly fuel invoices, not the fuel flow meters. The source has indicated that although the fuel meters continuously measure fuel flow for the algorithm, they are not set up to sum fuel use into a monthly total. This change has been made as requested.

In their comments received during the Public Comment period (received on October 10, 2005), the source indicated that they were maintaining electronic records and requested Division approval to be allowed to continue this practice. The Division approves of the use of electronic records and added the following sentence to the end of Section I, Condition 1.5 "Either electronic or hard copy records are acceptable".

Other Modifications

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments, to the Thermo E & P Renewal Operating Permit with the source's requested modifications. These changes are as follows:

Page Following Cover Page

- The citation (above "issued to" and "plant site location") on the page following the cover page provides the incorrect title for the state act. The title will be changed from "Colorado Air Quality Control Act" to "Colorado Air Pollution Prevention and Control Act". In addition, the dates were removed from the citation.
- Clarified dates for monitoring and compliance periods, i.e. changed "January - June" to "January 1 – June 30".

It should be noted that the monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

- Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

General

- The Reg 3 citations were revised throughout the permit, as necessary, based on the recent revisions made to Reg 3.

Section I – General Activities and Summary

- Revised the language in Condition 1.1 to address attainment status of the area in which the facility is located.
- Conditions 13 and 17 in Condition 1.4 were renumbered to 14 and 18 and Condition 21 in Condition 1.5 was renumbered to 22. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit.
- In Condition 1.4, General Condition 3.g (Common Provisions, Affirmative Defense) and the Reg 6, Part B opacity requirements were added as State-only requirements.

- Removed Condition 1.6, this is already address under Condition 3.1 (PSD).
- The alternative operating scenario language was revised to current updated language. Note that the alternative operating scenario for permanent turbine replacement was removed. Since the facility is a major stationary source for PSD and was issued a PSD permit, any permanent turbine replacement would require a BACT analysis. For major stationary sources the Division allows for temporary turbine replacement up to 270 days. We consider that this provides the source time to get a construction permit for any turbine replacement that is intended to be permanent.
- Reversed the order of Conditions 3.1 and 3.2 and revised the language in Condition 3.1 to more appropriately address PSD. Removed the language regarding Major New Source Review in Condition 3.2, since the area is now either attainment or attainment/maintenance for all pollutants only PSD review requirements apply.
- Based on comments made by EPA on another operating permit, the phrase “Based on the information provided by the applicant” was added to the beginning of Condition 4.1 (112(r)).
- Added a “new” Section 5 for compliance assurance monitoring (CAM). Note that no emission units are subject to the CAM requirements.

Section II.1 - Turbines

Most of the associated changes have been made in order to change the format for this permit in order to make it more consistent with the format for the permits issued for the other utility turbines and to include requirements that may have been previously overlooked. Specifically, the changes were made as follows:

- Added a specific condition to identify BACT for the turbines. PSD review was required for NO_x only.
- Added a specific condition to identify RACT for the turbines. At the time these turbines were permitted, the Greeley area was non-attainment for CO and PM. Although there were no add-on controls were associated with the RACT analysis, the permit should identify that RACT was applied to these units.
- PM₁₀ emissions are not addressed in the current Title V permit. At the time the construction permits were issued for these units, there were no requirements for PM₁₀ emissions. However, currently sources are required to report PM₁₀ emissions on their APENs. Therefore, a requirement was added to calculate PM₁₀ emissions annually for purposes of APEN reporting. It should be noted the source has been reporting PM₁₀ emissions on APENs.

- Reg 1 vs. Reg 6 requirements. The current Title V permit includes the Reg 1 particulate matter limit for fuel burning equipment and the Reg 6, Part B limit for SO₂ emissions. However, it should be noted that there is also a Reg 1 SO₂ requirement for the combustion turbines (0.35 lb/MMBtu – Reg 1, Section VI.B.4.c.(ii)) and a 20% opacity requirement in Reg 6, Part B, Section II.C.3. The Reg 1 requirements apply at all times. The Reg 6, Part B requirements are state-only enforceable and the Division considers that the Reg 6, Part B requirements do not apply during periods of startup, shutdown and malfunction since the Reg 6, Part B requirements incorporate the general provisions in 40 CFR Part 60 Subpart A (Reg 6, Part B, Section I.A). The general provisions in 40 CFR Part 60 Subpart A, specifically state that the opacity limits do not apply during periods of startup and shutdown (§ 60.11(c)) and various EPA policy memos have indicated that the provisions in § 60.11(d) exempt sources from the emission standards during periods of startup, shutdown and malfunction, unless the specific subpart states otherwise. For that reason, the Division considers that the permit should incorporate the Reg 1 SO₂ requirement and streamline the Reg 6, Part B SO₂ requirement. Therefore, the Reg 1 SO₂ requirement is referenced in the permit and the Reg 6, Part B SO₂ requirement is included in the permit shield for streamlined requirements (Section III.3 of the permit).
- Opacity requirements. Only the 20% opacity requirement in Reg 1, Section II.A.1 was included in the original Title V permit, the 30% opacity requirement in Reg 1, Section II.A.4, which applies under specific operating conditions was not included. It is not clear why the 30% opacity requirement was not included, therefore, it has been included in the renewal permit. In addition, as discussed above, the 20% opacity requirement from Reg 6, Part B was not included in the original Title V permit. As shown on the attached grid, none of the opacity requirements are more stringent at all times, therefore, all opacity requirements shall be included in the permit. The language in the permit for the 20% opacity requirement was revised to more closely match the language in the regulation. In addition, removed the requirement to submit a separate certification for burning natural gas. Submittal of the annual compliance certification serves as the certification that the source is complying with the opacity requirements.
- The current permit indicates that the emission factors for all pollutants are based on manufacturer's data (except NO_x, since emissions are determined by the compliance algorithm). However, a review of the files indicates that PM and VOC emissions were originally based on AP-42. The emission factors in the current Title V permit appear to be based on the lbs/hr limit in the construction permit divided by the design heat rate of the turbine (339 MMBtu/hr). AP-42 emission factors have been revised since the permit was issued, therefore, the most recent AP-42 emission factors for PM, PM₁₀ and VOC (shown in the table below) will be included in the renewal permit:

Pollutant	Emission Factor (lb/MMBtu)	Source
PM	0.0066	AP-42, Section 3.3-1, dated April 2000, Table 3.1-2a
PM ₁₀	0.0066	
VOC	0.0021	

Note that these emission factors predict lower emissions than the previous emission factors.

The SO₂ and CO emission factors are based on the requested emission rate (lbs/hr) divided by the design heat rate of the turbine (339 MMBtu/hr). A review of the files indicated that the requested CO emission rate appears to be based on manufacturer's data and verified by testing done to develop the algorithm. The SO₂ and CO emission factors will not be revised. The requested SO₂ emissions are constrained by the fuel sulfur content requirement (see second bullet below this one) and the CO emission rate is verified by the algorithm and portable monitoring and the renewal permit will require that the portable monitoring verify the emission factor.

- The current Title V permit retained the short term SO₂ limit (2.28 lbs/hr) from the construction permit. During processing of the construction permit, the Division considered that at the 150 ppmvd SO₂ limit in NSPS GG, potential emissions of SO₂ from the turbines would exceed 40 tons per year and that PSD review would have applied. The NSPS GG SO₂ standards specify that a source comply with either the 150 ppmvd limitation or not burn fuel that exceeds 0.8 weight percent sulfur. The weight percent sulfur requirement was included in the permit, as well as the construction permit short-term limit of 2.28 lbs/hr. However, at the weight percent sulfur limit in NSPS GG, SO₂ emissions for the turbines would exceed 40 tons/yr. In addition, based on the definition of natural gas included in the revised NSPS GG (20 grains of sulfur/100 SCF of gas, which equates to 0.068 weight percent sulfur), emissions from the turbines would exceed 40 tons/yr. Therefore, the Division considers that the short term emission limit from the construction permit should remain in the permit and that the NSPS GG SO₂ limits can be streamlined out in favor of the short term construction permit limit. The NSPS GG fuel sulfur content limit will be removed from the permit and included in the permit shield for streamlined conditions (Section III.3). In addition, the NSPS GG SO₂ limit of 150 ppmvd will also be included in the permit shield for streamlined conditions (Section III.3).
- The current Title V permit does not specify how compliance with the short-term SO₂ emission limit is monitored. The lbs/hr SO₂ limit appears to be based on the annual emission limit divided by 8760 hrs/yr of operation. A review of the files, indicates that the source specified in their February 1989 Compliance Report that the annual SO₂ limit would be met provided the gas used as fuel did not exceed a fuel sulfur limit of 2.4 grains/SCF. It appears that this value is a typographical error. The Division determined that a fuel sulfur content of 2.36 grains/100 SCF would insure compliance with the short term and annual emission limits set in the

construction permit. Therefore, the Division has included a requirement in the permit to limit the fuel sulfur content to 2.36 grains/100 SCF.

- The portable monitoring will be revised to reflect updated language. Note that the renewal permit will specify that the portable monitoring verify the CO emission factor (0.030 lb/MMBtu), since CO emissions are not determined from the algorithm.
- The short-term CO emission limit that was included in the construction permit for the turbines was not included in the Title V permit based on the Division's short-term emission limit policy. However, at the time the turbines were permitted the area was designated as non-attainment for CO and the turbines were permitted at 90 tons/yr and therefore avoided major non-attainment area new source review requirements. In addition, as indicated in the preliminary analysis for the construction permit, RACT was required for CO. The construction permits required the source to use the continuous parametric monitoring system and algorithm to assess compliance with both the NO_x and CO emission limits. The algorithm assesses compliance on an hourly basis. Therefore, the Division considers that the hourly CO limit is a RACT limit and under the short-term emission limit policy should have remained in the Title V permit. Therefore, the hourly CO limit is included in the renewal permit. Note that although the construction permits included a short-term (hourly) emission limit for PM, the Division considers that since there was no continuous monitoring requirement for this limit and no performance test requirement for this limit, that the short-term limit for PM does not really represent a RACT limit.
- PPM NO_x limit: The ppm NO_x limit in the current Title V permit is the BACT NO_x limit. Language has been added to indicate that the standard is on a dry basis and that the averaging time is one hour. The dry basis is consistent with the NSPS GG limit, so even though the construction permit does not specify wet or dry basis, the Division presumes that the standard is consistent with the NSPS, which is on a dry basis. In addition, the February 1989 Compliance Report submitted for the construction permits (pg 13, last paragraph) states "the algorithm was devised to assess the compliance/noncompliance of the turbine based on hourly averaged operating conditions". Also, for turbines with water or steam injection, NSPS GG specifies that excess emissions shall be reported for any one-hour that the average water-to-fuel ratio falls below the water-to-fuel ratio determined to demonstrate compliance with the standards. Therefore, it seems clear to the Division that a one-hour averaging time was intended for the NO_x BACT limit. Finally, the construction permits implied that the NO_x BACT limit was corrected to ISO conditions, but this requirement is not specified in the current Title V permit. Figure 3 in the February 1989 confirms that the NO_x predicted by the algorithm is actually corrected to ISO conditions; therefore, the renewal permit was revised to specify that the NO_x BACT limit is at ISO conditions.

- NSPS GG NO_x limits and Monitoring Requirements: The NSPS GG NO_x limits were identified in the construction permit at 115 ppmvd at 15% O₂ and ISO conditions. The construction permit indicated that the BACT limit supercedes the NSPS NO_x limit. The NSPS NO_x limit was not included in the Title V permit for that reason. The renewal permit will include the NSPS NO_x limit in the permit shield for streamlined conditions (Section III.3).

NSPS GG requires that for turbines with water or steam injection to control NO_x emissions, the source install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine. Excess emissions of NO_x for these units are then reported as any unit operating hour for which the average steam or water to fuel ratio falls below the acceptable steam or water ratio needed to establish compliance as determined by the performance test. While the source records the steam and fuel consumption rate, the ratio of steam to fuel does not appear to be monitored and is not used to indicate compliance with the NO_x limit. The source has an alternate approved monitoring system. Therefore, the NSPS GG requirement to monitor the fuel consumption and ratio of steam to fuel will be streamlined out of the permit, as well as the excess emission reporting requirements in favor of the approved parametric monitoring system and compliance algorithm required by the construction permit.

It should be noted that NSPS GG was revised on July 8, 2004 (Federal Register, Volume 69, No. 130). The NSPS GG revisions provide additional monitoring options for NO_x emissions and nitrogen and sulfur content monitoring that have previously been approved by EPA. The revisions specify that previously approved alternative monitoring methods for existing turbines could still be used. Since these units have previously approved monitoring, no other revisions have been made to the renewal permit based on the NSPS GG revisions.

It should be noted that NSPS GG revisions indicate that no nitrogen sampling is required if credit was not taken for fuel-bound nitrogen in setting the NO_x emission limitations. This was the case for these units. Therefore, since sampling the fuel for the nitrogen content is not required, there are no requirements necessary to streamline.

- NSPS GG Fuel Sampling for Sulfur Requirements: As indicated previously, the NSPS GG revisions included alternate monitoring provisions that have previously been approved by EPA. For sources that use natural gas that meets the definition in 40 CFR Part 60 Subpart GG § 60.331(u), then no fuel sampling for sulfur content is required. The source may demonstrate that they are using natural gas based on either fuel sampling or the gas quality characteristics in a valid contract or tariff sheet from the gas supplier or sampling in accordance with the provisions in sections 2.3.1.4 or 2.3.2.4 of 40 CFR Part 75, Appendix D. Since the renewal permit will require a fuel sulfur limit that is more stringent than the natural gas definition, the Division considers that the methods specified in

NSPS GG to demonstrate the fuel is natural gas is sufficient and these methods will be included in the renewal permit.

- In the original Title V permit, the Division required that performance testing (Condition 1.1.4) be conducted on the turbine twice per permit term to monitor compliance with the BACT NO_x limit. The results of the first test (October 12, 199) indicated NO_x emissions at or below 41% of the standard. The results of the second test (June 9 and 10, 2003) indicated NO_x emissions for one unit at 41% of the standard and the other at 60% of the standard. Based on the results of the performance tests, the Division will only require one performance test (in the 3rd year) to monitor compliance with the NO_x BACT and CO RACT limits.
- The requirement to determine the Btu content of the gas (Condition 1.5) indicates that the “lowest gross heating value” should be used. “Gross” and “higher” heating value have the same meaning but the term “lowest gross heating” value has caused confusion for sources and inspectors as to whether the “lower” or “higher” heating valued should be used. The renewal permit clarifies that the “higher” heating value of the fuel shall be used in emission calculations. The clarification was made in the permit conditions specifying the emission calculation, rather than in the condition requiring that the Btu content be determined.
- The current Title V permit does not specifically identify requirements for the continuous parametric monitoring system and compliance algorithm. The current Title V permit specifies that the unit are subject to the continuous monitoring system requirements in 40 CFR Part 60 Subpart A § 60.13 and the excess emission reporting requirements in § 60.7. Therefore, the Division has included more specific requirement for the continuous parametric monitoring system and compliance algorithm. Most of the requirements have been included in a separate permit condition (new condition 4) as this is consistent with the continuous emission monitoring system requirements for other Title V utility turbine permits. It should be noted that the current Title V permit references the excess emission reporting requirements in 40 CFR Part 60 Subpart A § 60.7, these requirements specify that reports shall be submitted semi-annually, except when more frequent reporting is required by the applicable subpart or if the Division determines that more frequent reporting is necessary to accurately assess the compliance status of the emission unit. The Division has determined that more frequent reporting is necessary and therefore, excess emission reports shall be submitted quarterly. It should be noted that the source has been submitting these reports on a quarterly basis.
- The NSPS general provisions included in the current Title V permit (condition 1.6) contain many requirements that may no longer apply or may be addressed in other parts of the permit (i.e monitoring system requirements are included in new condition 4 (see above discussion)). Therefore, the NSPS general provision requirements have been revised as appropriate.

- Removed the operating and maintenance requirements (Condition 1.8). Similar language is included in the RACT requirement for CO that was added to the renewal permit.

Section II.2 – Natural Gas Fired Boiler

- As of the Division's 8/17/04 inspection, construction has not commenced on this unit. It should be noted that the provisions in Section II.2 expire on April 14, 2005. Since these conditions have expired, the Division will remove the provisions for the natural gas fired boiler.

Section III – Permit Shield

- Based on comments made by EPA on another permit, the phrase "based on the information available to the Division and provided by the applicant" was added to the beginning of the justification for the shield for the PSD requirements.
- Based on comments made by EPA on another permit, the following statements were added after the introductory sentence in Section 1 "This shield does not protect the source from any violations that occurred prior to or at the time of permit issuance. In addition, this shield does not protect the source from any violations that occur as a result of any modification or reconstruction on which construction commenced prior to permit issuance."

Ozone Early Action Compact Requirements (Reg 7)

The Division entered into an early action compact to delay being re-designated as a non-attainment area for the 8-hour ozone standard. The early action compact requires controls to reduce VOC emissions in the 8-hour ozone control area. The early action compact VOC control requirements have been included in Colorado Regulation No. 7 and those requirements became effective, on a state-only basis, on May 31, 2004. The VOC control requirements apply to oil and gas operations (Colorado Regulation No. 7, Section XII) and stationary internal combustion engines (Colorado Regulation No. 7, Section XVI) located in the 8-hour ozone control area. Since the facility is not involved in oil and gas operations, only the stationary internal combustion engine requirements potentially apply to this facility. The engine requirements apply to natural gas-fire engines rated at 500 hp or greater. Although there is an engine listed in the insignificant activity list in Appendix A, that engine is diesel fuel-fired and therefore the engine control requirements do not apply.

Section IV – General Conditions

- Added an "and" between the Reg 3 and C.R.S. citations in General Condition 3 (compliance requirements).
- Added language from the Common Provisions (new condition 3). With this change the reference to "21.d" in Condition 20 (prompt deviation reporting) will

be changed to “22.d”, since the general conditions are renumbered with the addition of the Common Provisions.

- The citation in General Condition 7 (fees) was changed to cite the Colorado Revised Statute. In addition, any specific identification of a fee (i.e. \$100 APEN fee) or citation of Reg 3 was removed and replaced with the language “...in accordance with the provisions of C.R.S. [appropriate citation].”
- The citation in General Condition 13 (odor) was corrected. In addition, the phrase “Part A” was added to the citation for Condition 13 (odor). Colorado Regulation No. 2 was revised and a Part B was added to address swine operations. Colorado Regulation No. 2, Part B should not be included as a general condition in the operating permit.
- The citation in General Condition 16 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from “Reg 1” to “Reg 9”.
- Added the requirements in Colorado Regulation No. 7, Section V.B (disposal of volatile organic compounds) to General Condition 28.

Appendices

- First Page of Appendices – The phrase “except as otherwise provided in the permit” was added after the word “enforceable” in the disclaimer at the request of EPA.
- Appendix B and C were replaced with revised Appendices.
- The EPA addresses in Appendix D were corrected.
- Added ppm, ppmv and ppmvd to the list in Appendix E.

Total HAP Emissions (tons/yr) from Thermo Power & Electric

Emission Unit	formaldehyde	acetaldehyde	toluene	benzene	acrolein	xylene	chloroform	hexane	dichlorobenzene	nickel	cadmium	chromium	Total
Turbine	1.08	0.18	0.55	0.65	0.03	0.10							2.58
Turbine	1.08	0.18	0.55	0.65	0.03	0.10							2.58
Cooling Tower							3.16E-03						0.00
Total	2.15	0.36	1.11	1.29	0.06	0.19	3.16E-03	0.00	0.00E+01	0.00E+01	0.00E+01	0.00E+01	5.17

The heating value of natural gas was presumed to be 1020 Btu/scf